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SPATIAL PLANNING WITHIN THE FRAMEWORK OF THE MONROVIA STRATEGY FOR THE ECONOMIC DEVELOPMENT OF AFRICA

Summary

1. In this document, the secretariat of the Economic Commission for Africa analyses the spatial implications of the implementation of the Lagos Plan of Action and submits for the Committee's careful consideration, some preliminary reflexions on human settlements policies, strategies and programmes to be adopted within the framework of the implementation of this Plan which is a follow up of the Monrovia Strategy for an endogenous, self-sustaining and self reliant development of the African region.

2. This strategy stresses the adoption of an integrated approach to the various economic and social activities, considering the inter-dependence of these activities. The strategy further emphasizes that the two sectors which would play a leading role and facilitate the attainment of these objectives are the food and agricultural production sector, on the one hand, and the industrial production sector, on the other. Indeed these two sectors are considered as sectors which would, through multiplying effects, have linkages with the rest of the economy.

3. Furthermore, it is emphasized in the strategy that the development envisaged is a wider process than a mere increase in the GNP, since it is intended to lead to an improvement in the quality of life of the majority of the people through equitable distribution of the fruits of development among all the social strata, all the regions of the countries and throughout the whole continent.

4. As stated in the Revised Framework of Principles for the implementation of the New International Economic Order in Africa 1/, which constituted one of the elements of the reflexion that led the African Leaders to define a new development strategy for Africa, a well conceived plan must be based on data other than only economic parameters and aggregates. "Among the many dimensions that are now due for recognition is the spatial structure of the socio-economic system. Regional (or subnational) planning which takes full account of the spatial aspect of planning (including the development of growth poles and their integration with the rest of the economy) is of particular importance for integrated rural development and for policies of planned urbanization."

5. It is also clearly stated in the Monrovia Strategy that the spatial dimension forms an important component of the decisions to be taken with regard to economic and social development plans and policies.

6. Hence, it is an essential factor for the formulation of economic and social development plans for the realization of the Lagos Plan of Action.

7. There is the need to define, first of all which strategies and human settlements programmes and policies should be formulated within the framework of the Lagos Plan of Action, taking into account national conditions and the regional context.

1/ E/CN.14/ECO/90/Rev.3, para 211.

8. The vital role that human settlements policies must play both at the national and regional levels cannot be overemphasized. This is the reason behind the submission of this document by the secretariat to the Committee, the document supplements document E/CN.14/HUS/32 entitled "Human Settlements and Regional Economic Development", document E/CN.14/HUS/43 entitled "Human Settlements and the African Development Strategy", and document E/CN.14/HUS/49 entitled "Regional Policy on Human Settlements in Africa" which were presented at previous meetings.

9. The Committee is requested to define the programme of work that should be implemented as well as the modalities of implementation and to draw up a regional plan of action in support of the recommendations of the national policies.

10. It is suggested that as a first step studies should be conducted in some selected countries and, then as a second step an analysis of the regional situation with respect to the priority objectives of the Lagos Plan of Action would be undertaken using the available national data. Experts who would meet in working groups or technical study committees would, on the basis of the available data then formulate recommendations to be considered by the Committee with a view to adopting a regional policy and recommending national policies.

I. Introduction

11. The report of the Monrovia colloquium on the development prospects of Africa through the year 2000 organized jointly by [illegible] in 1979, defined the various possible types of development for the African Region. The Extraordinary Summit of Heads of State and government held in Lagos, Nigeria, in 1980, considered the implications and modalities for the implementation of the model of development adopted at the Monrovia Colloquium.

12. The main objective of the Lagos Summit was to formulate the guiding principles for translating the Monrovia Strategy for the economic development of Africa into concrete action. The overall guiding principles contained in the Lagos Plan of Action may be summed up as follows:

(i) The economic development and growth of the African region should be based on the fundamental principle of collective self-reliance with the view to improving the standard of living of the urban and rural population.

(ii) The endogenous and autonomous nature of this model of development and growth calls for an integrated approach to the various economic and social activities, considering the inter-dependence of these activities.

(iii) Among the various economic activities, an absolute priority should be accorded to agriculture in order to ensure self-sufficiency in food for the total population.

(iv) Agricultural development should condition and promote industrial development and production, energy policies, communications networks, transportation and inter-African trade, training programmes, choice of technologies, protection and improvement of the environment and the setting up of suitable institutions at all levels to promote inter-African co-operation for the mobilization of the required financial and material resources.

13. The Monrovia Strategy for the development of Africa and the Lagos Plan of Action have defined an economic doctrine and the modalities and conditions for its implementation. This doctrine is based on a planning approach which integrates all the economic sectors for an autonomous and endogenous development. However, the formulation of this doctrine is not restricted to a disconnected economic abstraction of the geographical framework within which it should be realized.

14. The main objective of this document therefore is to explain the spatial implications of the implementation of the model of economic development set out in the Lagos Plan of Action. In other words, it is a study on the implications of the application of the principles of the Lagos Plan of Action on the morphology of the geographical area of the African continent.

15. To study these implications means adopting, as far as methodology is concerned, a dialectical approach which determines the organizational pattern of the document. This document is therefore divided into three parts: part one covers a theoretical study of the relation between economic planning and spatial planning in Africa. Part two presents an analysis of the structure of the African geographical area based on a study of the historical conditions which dictated its present nature. Finally, part three deals with the definition of a [illegible] policy for spatial planning in Africa in view of the type of economic development endorsed by the Monrovia declaration and the Lagos Plan of Action.

II. The relation between Economic Planning and Spatial Planning in Africa

16. The Monrovia Strategy for the economic development of Africa has fixed comprehensive objectives that all the States of the region should, as of necessity, attain. It is therefore incumbent on each State (or group of States) to organize with sovereign power, its development so as to achieve these economic objectives; however, the achievement of these objectives implies, as a matter of necessity, the formulation of a physical planning policy.

17. Nevertheless, although most of the governments of the region have acknowledged the need for planning their economies, only a few of them have correspondingly formulated national physical plans which incorporate considerations for the harmonious location of the economic activities. Evidently, the models of economic development so far adopted by most of the States have made the formulation of a coherent physical planning policy almost a useless exercise.

18. Indeed, these models of development and growth have been characterized almost everywhere by a type of foreign oriented economy, made a satellite in relation to the centre of world economic decision-making, represented by the developed world. So far we have simply been illustrating the economic theory of the 'centre and periphery' propounded by some contemporary African economists. In this context, almost all the African national economies were, and are still, dependent on the economic structures of the developed countries. These developed countries therefore control the powers to decide and direct the development of the African States.

19. In this regard, each time the African States have formulated economic and social development plans, the achievement of the sectoral objectives of these plans has remained dependent, more or less, on the massive intervention of the developed countries, given the dependence of African countries on the World economy. The development plans thus formulated have, very often appeared like catalogues of desires whose achievement depends to a large extent on the interests and the support of developed countries.

20. From then on, the problem becomes simple. On one hand, there are the African States which draw up development plans and arrange their activities in accordance with a certain will for developing their territory. On the other hand, there are the developed countries which have to finance a large portion of the sectoral components of these development plans. Obviously, the developed countries, despite their philantropic statements on co-operation and development, are in fact only interested in the objective of achieving growth and expansion of their own economies. Consequently, they participate in the realisation of only the sectors of African plans that are profitable from the point of view of their own investments and in locational patterns which are more likely to ensure this profitability.

21. That is to say, the major consequence of the foreign oriented nature of the African economies in relation to those of the developed countries is the break between economic planning, on the one hand, and spatial planning, on the other. In other words, the coherence and the complementarity between economic planning and physical planning necessarily presuppose an autonomous decision-making capability of each State, independence and freedom of choice of financing, and a type of autonomous and endogenous development.

22. This is precisely because the Plan of Action for the implementation of the Monrovia Strategy for the development of Africa has emphasized, as a prerequisite, the existence of an endogenous and autonomous economy. Thus it is necessary to re-define the conditions and the modalities for integrating physical planning into economic development plans.

23. The aim of this study is therefore to indicate precisely how far and to what extent the organization of space in Africa fits in with the pursuit of a planning policy within the context of the development model adopted in the Lagos Plan of Action. Most of the States in the region are still far from endorsing and accepting the complementarity between the two systems of planning.

24. Generally physical planning may be defined as the search, within a given geographical context, for a harmonious distribution of men in relation to the natural resources and economic activities. That is to say, the whole discipline is based essentially on the notions of location and balance. Basically, it can be said that physical planning is not linked to any doctrine or political ideology. However, it can be said that physical planning can be operational only in the States where the intervention of the Government in the economic and social life is well accepted.

25. Economic planning fixes the objectives to be attained; however these objectives should find relevance at the local level and in the geographical space. It is therefore in terms of development activities that the variable of location comes into play. This means that physical planning rates second to econometric planning. Taking account of the locational factor generally adds to the unit cost of an establishment calculated on the basis of only the variables of econometric statistics. In other words, the change from sectoral planning to spatial planning often entails an increase in investments over a short period of time. However, as we shall see in the next chapters, this additional burden is negligible in relation to the consequences of economic imbalances in matters of territorial development.

26. Some African governments maintain that a territorial development policy is a luxury they could not afford without sacrificing their immediate growth objectives at an appreciable cost. Physical planning to these same governments is only of a qualitative interest and not a priority in relation to the requisite needs for economic growth. In other words, according to these governments, emotional considerations of the well-being and growth of the population are secondary as far as the problems related to their survival are concerned. Admittedly, the basic principle of any territorial development policy is to consider man first and foremost as a human being and then as a producer. This means that through physical planning, the notion of the qualitative improvement of living conditions is integrated into the basic notions of economic and financial profitability.

27. Obviously, it is possible to consider physical planning as a luxury so long as development is still at a relatively early stage. In this case, it is a matter of dealing with relatively restricted economic areas where basic human settlements are located for the population engaged in limited economic activities which may be described as "natural". Under such conditions, there is no disastrous break between geographic space and the life style of the people. These people who adapt themselves to their surroundings survive in such quasi-natural micro-environment in a harmonious and balanced manner.

28. It is certain that at present, these modes of life no longer exist in a pure form any where. The establishment of major political and economic institutions and the adoption of new methods of large-scale production, have disturbed the balance and the geographical harmony in which the economic activities have been organized. Consequently, just as the organization of the large-scale economic production led to national economic planning, the breakdown of balance between populations and the "environment" demands a recourse to physical planning.

29. At the present stage of economic development in the region, no State can therefore escape the urgent requirements of physical planning. Moreover, any economic planning exercise which does not integrate the variables of location can only be considered as presenting the picture of a body without the skeleton.

30. Once the imperative nature of physical planning is accepted, the modalities of its formulation and implementation, given the exigencies of the model of economic development in Africa adopted in the Monrovia declaration and the Lagos Plan of Action can then be analyzed. This analysis is based firstly, on an examination of the changes that have taken place within the African geographical space taking into consideration the models of development that have been applied so far. Then in a sectoral study of the objectives of the Monrovia Declaration and the Lagos Plan of Action, the spatial implications and the requirements of the development of the African region will be defined.

III Consequences of the colonial and post-colonial mode of production on the development of the African geographical space

31. In the older developed countries, geo economic areas were first organized on the basis of a high yield agricultural economy then there were the central points of production and organization which constituted genuine poles around which economic relations developed and this finally led to national territorial planning. These development poles are the cities. Urbanization is therefore an old phenomenon in the older developed countries, where it was achieved slowly and progressively in consonance with the various technical revolutions.

32. The effects of alienation resulting from urbanization have been progressively brought under control resulting in a continuing adaptation of the planning of the national physical space to the effects of the mode of production and the models of economic development. It can therefore be said that the cities of the developed countries have been relatively well integrated with their hinterland with which they maintain relations of functional complementarity. These cities have their own dynamism and maintain among themselves balanced relations of co operation and trade facilitated by the existence of a coherent and integral communication network. Therefore in these cities unitl quite recently the development of the national space had taken place in a coherent and harmonized manner.

33. Undoubtedly, since the major industrial revolution and considering the spectacular development of technologies linked to scientific advancement the structuring of the geographical space of these countries has experienced alarming imbalances and dislocations. The most striking consequences of this have been the management costs of the major metropolis which are developing into conurbations and negative effects on the environment.

34. However, the possibilities of State intervention and control in these developed countries give support to the expectation of a reversal of this trend towards a new and voluntary balance. These possibilities of intervention are political, legislative and especially financial, technical and scientific in nature.

35. The African continent has been spatially structured on the basis of a historically different socio-economic process and the African urban phenomenon is also very unique and quite complex.

36. With the exception of some pre-colonial cities most of which have not survived the contemporary modes of production, almost all the present cities in Africa were built during the colonial era. The African urban phenomenon which is a major determinant of the structuring of the regional space is therefore characterized everywhere by a colonial tie, hence a relationship of political and economic domination.

37. It is within this context of the domination of a society by another society, the latter dictating the mode of production of the former, that African economic and geographical space was organized and structured. The characteristics of the continent's spatial morphology are therefore explained by the development pattern imposed on African countries by their European colonizers.

38. For instance before colonization the production activities of African societies were based mainly on a subsistence economy characterized by balance between production and consumption. The low level of production was a direct consequence of the low level of technology and the low population densities. Even though since the 10th century the development of commercial trade routes between the interior of the African continent and the northern and eastern coasts, as well as the existence of great empires and kingdoms favoured the birth of commercial and administrative centres most of which had large areas of influence, it can be said that the distribution of population and activities occurred under conditions of balance, an embryonic trade network organized, more or less, according to the effects of circumstantial forces and natural factors. At this stage of development there was no noticeable imbalance in the surrounding space between the populations and their economic activities. This phenomenon, though a general one, has some local characteristics.

39. With colonization the orientation changed radically in that vast spaces had to be controlled, administered and exploited: hence, the need for urban infrastructure and the creation from scratch of a network of agglomerations to be used as a basis for organizing this exploitation.

40. The process of exploitation is well known. The colonizers replaced the subsistence crops produced by the traditional societies with cash crops (export crops) at more remunerative prices. The virtually exclusive production of export crops at the expense of large scale food crop production led to the first real break between the production and consumption. As a result foodstuffs had to be imported under the exclusive control of the colonizing countries to feed the African people.

41. In this context, the specific role of almost all the African cities was to serve as a depot and distribution centre. The African city served as a collection point for agricultural produce from the hinterland for export. At the same time it played the role of a distributor of goods manufactured in the countries of the colonizers.

42. It is therefore not mere coincidence that all the large African agglomerations are harbour cities which play an important intermediate role in the world economy.

According to this same logic about this type of economy the African cities which were not ports were generally situated at transfer points such as meeting points of waterways and railways, roads and waterways, railways and roads. Moreover the lines of all communication networks and the configuration of urban lay-outs everywhere testify to the dominant relationship existing between the African region and the colonizing countries of Europe.

43. Thus, unlike what happened in the cities of developed countries whose role had evolved over the centuries, the African urban economy has not experienced any changes from the primary sector to the secondary and then the tertiary sectors. African cities therefore have no economic impact over their hinterlands which they control only administratively. This special characteristic of urbanization in Africa and, consequently, of the structuring of space was systematically arranged by the European countries, especially shortly after the second World War, between 1945 and 1955. This period was marked especially by the desire of the colonizing countries to control both the people and the territories under their dependence. Ports gradually became important in the territories where exports of raw materials (agricultural and mineral) played a vital economic role. This situation encouraged migration from the rural areas which caused great increases in urban populations.

44. With the exception of a few special cases, the colonial administration was concentrated primarily in the capitals of the countries and this attracted most of the investments to these capitals. Apart from these national capitals, the district capitals played only a basic administrative role aimed at ensuring colonial order in the territory. Consequently there is almost everywhere, a type of urbanization characterized by the proliferation of one or two large towns inhabited by between 30 and 60 per cent of the country's population, where almost all the investments are concentrated and which account for more than half of the GNP.

45. Soon after independence, most governments, aware of the need to create nations united within defined borders of their States, introduced very centralized authorities which did not allow for any form of deconcentration or regional and local decentralization. These governments, forced by circumstances, therefore strengthened de facto the trend towards imbalance in the spatial development of their territory. As a result of the constant improvement in the transportation networks and also because of the ever growing concentration of decision-making powers in the capitals, the large cities continued to extend their zone of influence and in time could do without the intermediary role played until then by the secondary centres. The secondary centres therefore gradually lost control of their hinterland. Their activities reduced or declined, reduction in commercial activities slowing down in construction work, exodus of the rural population to the capitals, gradual reduction in population growth and reduction in employment potential.

46. Since independent African States had generally maintained and even strengthened the development system inherited from their colonial masters, the real choice and control of their own development pattern was, in fact, foreign to them. Therefore, as we have explained earlier since the foreign oriented nature of the African economies had been strengthened, decisions regarding physical planning in these States were very often taken in developed countries.

47. Consequently both at the national and regional levels, physical planning or the lack of physical planning is strongly characterized by serious imbalances, namely:

(i) Imbalance in the lay-out of towns where well developed areas and slums co-exist under conflicting relations;

(ii) Imbalance in the urban hierarchy where the dominant capitals do not allow for the growth of any other balanced metropolis;

(iii) Imbalance in the urban/rural relations marked by discriminatory development of communication networks and by the insufficient remuneration for agricultural labour as compared to salaried employment offered in urban areas.

(iv) Population imbalance as evidenced by the reduction in rural population caused by a constant rural exodus which contributes to the over population of the urban areas;

(v) Imbalance in the economic patterns in a situation where a traditional type of production and consumption conflict with a modern one entirely foreign oriented and dependent on the economy of rich countries;

(vi) Inter-zonal imbalance between regions naturally well endowed and the less advantaged regions; and lastly

(vii) General imbalance among the various countries of the region, between the subregional zones (for example the Sahel and the forest zone), between cash crop cultivation and subsistance farming, between foreign oriented economies and endogenous and self-sustained development, and between landlocked and coastal countries.

48. In conclusion, all these imbalances inherent in the pattern of foreign oriented development and economic growth practised **hitherto** in Africa can be corrected only through a radical change in the mode of economic development and the adoption of an endogenous and self sustained development system. The Monrovia Strategy for the economic development of Africa offers an excellent opportunity for a new approach to spatial planning. We can now begin to reflect on the conditions and modalities of this new methodology of physical planning.

IV. The main elements of physical planning for spatial restructuring in Africa based on the development objectives of the Monrovia Declaration and the Lagos Plan of Action

1 Physical planning and agricultural development

49. The traditional model of organizing agriculture in Africa depends generally on the ancestral community. This community, a true basic social nucleus constitutes some kind of a self-sufficient unit of production distribution and consumption on a community basis structured on a type of social organization based on the notion of age. The technical model of production adopted in this context to ensure the survival of the family group is very basic. It is based on a temporary and extensive exploitation of the land cleared systematically through techniques of bush burning. Production techniques are rudimentary, dealing with food crop farming which does not require any means of production other than labour and hand tools and is characterized by shifting cultivation practices. Animal rearing, whether undertaken by the farmers

or specialized breeders, is always intensive and basically distinct from vegetable production. The land scenery resulting from this type of agriculture is a little humane and despite everything, it meets the needs of the people. Consequently, the productivity of labour, land and livestock is extremely low and generally is stagnant, with marked seasonal variations.

50. Contact with the colonial economy led to a substantial change in the traditional techno-economic system. The introduction of cash crop production meant for the international market resulted in a break in the traditional arrangement based on self-sufficiency in food and some limited trade. Alongside food production, an exclusively foreign oriented trade sector sprang up in the majority of the production areas; this created a dualism in the rural economy. This dualism has itself created a spatial imbalance between the regions affected by the development of export crop farming and the other regions. In such a system linked to the world economy, rural spatial development was planned exclusively for the benefit of the first category of regions.

51. Following the gradual commercialization of the agricultural economy, traditional agricultural structures have lost their initial economic and social role. Even after independence the production of new crops was quickly introduced under foreign pressure and these crops were cultivated on often insufficiently prepared land. On the whole the new agricultural farms were developed mostly within the framework of the traditional technology without the introduction any major technical innovation. The new production activities were somewhat absorbed into the world of traditional technique.

52. Consequently, although the model of spatial organization has been modified and labour productivity has increased overall at times, the hourly or daily productivity expressed in terms of foodstuff has often fallen. Production has increased in terms of the area covered but not through the intensification of cultivated areas. The advent of monetary income has brought about the consumption of new types of food without the accompanying accumulation of capital since productivity was limited by continued use of traditional technology.

53. The former society constituted an integrated system based on a coherent social and spatial organizational pattern. The present African rural society is undergoing a complete evolution in search for a new coherence. With the new trend we are confronted with a "pioneer" and "mining" agriculture which consumes space and destroys land but is not sectorally integrated this is because it is based on the induced effects of a foreign oriented economic network which benefits only a fraction of the agricultural activities.

54. We therefore understand why Africa despite its enormous agricultural potential cannot be self sufficient in food. Although the economy of the majority of the States depends essentially on agriculture which absorbs between 70 and 80 per cent of the total active population represents about 40 per cent of the GDP and 60 per cent of the foreign trade (excluding oil) Africa remains a continent where the great majority of the people are underfed.

55. Under such conditions, it is easy to understand why the main objective of the Monrovia Declaration is food self-sufficiency within the framework of an autonomous and self sustained agriculture which is not influenced by deteriorations in the conditions of trade. Physical planning aimed at ensuring the successful realization of this objective should, therefore be based on a new strategy for specific actions.

56. It is not necessary to undertake a detailed examination of the various recommendations of the Monrovia Declaration. It is possible, however to suggest major physical planning orientations within the scope of the new agricultural development objectives which given the diversity of the local situation and the subregional agrarian peculiarities, will only be indicative of what could be done.

57. The most elementary unit of physical planning in relation to agriculture should be the village because food crop farming should of necessity come under the control and direct monopoly of rural societies organized at the level of the village and family agricultural production. Once this necessary factor is accepted, the primary objective of spatial planning would be to resolve the issue of the optimization of the use of land. The approach which allows for the means and factors of production (especially land) to be placed at the disposal of the peasants individually or collectively has so far offered the best conditions for land development.

58. Advances in cultivation techniques implies fixing the location of housing and cultivated lands to permit their development and the acquisition of landed capital. The application of modern crop protection methods calls increasingly for geographical concentration of crop types. This concentration has many technical and economic advantages because it enhances the mechanization of operations at a minimum cost and enables several farmers to do their work simultaneously and jointly. It also makes it possible to improve productivity through large scale development projects (construction of structures to check erosion, establishment of irrigation and drainage networks etc..)

59. Physical planning of localities must lead to the introduction of crop rotation and techniques likely to increase soil fertility as well as the adoption of technical crop production systems and shifting cultivation. A prerequsite of this type of land restructuring is obviously an inventory of the soil types and the evaluation of their productive capacity which will make it possible to draw up the rural plan to be used for land reallocation.

60. The development of rural agricultural land must aim at harmonizing the various components of the agricultural structure. Agriculture, livestock breeding and fishing must therefore be integrated into a network of complementarity. For example, the introduction of livestock feed into the system of cultivation creates a functional relationship between livestock production and agricultural production. This complementarity also implies a planned integration of the various rural networks namely wind-break networks, fire belt networks and transhumance.

61. The rural lands thus developed must be concentrated around human settlements which must also be developed taking into account the major agricultural activities. The rural settlements taken as a whole can then have functional hierarchical relationships from the village to the big cities passing through the small and secondary towns which are capable of playing the role of big cities.

62. Once physical planning has been completed at the local level, groups of localities can then be planned on a zonal or even global basis. It is at this stage that the questions of management of water, forest, environment in general, removal of enclaves, etc. can be tackled effectively.

63. The water problem should be recognized as the most important aspect of physical planning in rural areas. It is a fact that the first major ventures dealing with the organization of spaces had river basins as their framework. Two reasons account for this: firstly, the multiplicity of the desired objectives, namely water control and flood reduction, improvement of navigability, agricultural development (through irrigation) and industrial development (power supply). Secondly, the global nature of the operations (since constructional works have value only if viewed within a global context). It is obvious, therefore, that countries within the catchment area of a river are united with regard to all aspects of the water problems. Thus, the river is not only an instrument for the unification of phenomena but also a factor in the assemblying of groups of people.

64. At the level of small territorial and micro-development units, the river can create an interdependence which calls for the integration of planning programmes. The exploitation of water resources requires close co ordination of work between countries located in the basin so as to determine the trade patterns that should be established between the various levels of human settlements.

65. Water problems are varied and this explains their complex nature: judicious use of the available water, protection, evacuation, pollution etc... and more significantly the frailty of the equilibrium established by nature. Endowed with a power of destruction comparable to its power of regeneration, water is basically ambivalent. Besides, it is impossible to divorce technological elements from economic and social elements. The foregoing underscores the importance of the work that should be done in respect of the water cycle and its various climatic, hydrogeological and biological aspects. In brief, taking account of all these aspects constitutes the basis of genuine physical planning.

66. Physical planning of forest resources and environmental protection is a substantive issue and will be treated in a special chapter in relation with aspects of the physical planning of industrial resources.

67. In conclusion the search for food self sufficiency within the framework of an autonomous and self sustaining economic development model must of necessity take into account the judicious use of space and its resources. Physical planning must encourage the introduction of geographical rationality in the calculation of costs and quantitative evaluation of agricultural production.

68. The priority accorded to agricultural production presupposes a more systematic use of such factors of production as improved seeds, fertilizers, crop protection products, agricultural implements, animal-drawn equipment, mechanization, power etc.. This would make it possible to develop agro industrial production activities. Such industrialization also constitutes a fundamental focal point of physical planning.

2. Physical planning and industrial development

69. The Monrovia Declaration and the Lagos Plan of Action for the economic development of Africa recommend that all the sectoral aspects of the economy should be integrated together into a set of relationships based on complementarity. This integration which

is essential makes it imperative to analyze, first of all, industrial development in relation to agricultural development and then the specific autonomous aspects of industrial development.

70. Agricultural development leads to the creation of industries. Increased agricultural productivity is linked to the existence of an industrial base which cannot be laid without financing from mobilized agricultural surplus and outlets provided, at least partly, by a changing agricultural system. The first problem, therefore, is to increase and mobilize agricultural surplus and use it effectively to create industries.

71. Thus the planner cannot consider either agriculture or industry in isolation. He should aim at developing agro industries based on agricultural production. Thus the agricultural development policy integrated into the industrial development policy will not consist in merely popularizing new techniques or increasing the production objectives. It must lead to an agricultural revolution resulting from the introduction of agro industrial activities within the framework of the modification of rural technology. This implies the adoption of a new development pattern.

72. The role of industrial units is essential at this level for spatial organization. Agro industrial complexes should be established around dynamic industrial units. There can be no real agricultural development without the use of new industrial factors of production created by backward linkage industries and the use of agricultural raw materials by packing and processing units in a forward-linkage process. This is how the concept of inter-sectoral integration recommended in the Monrovia Declaration should be applied.

73. Backward-linkage industries must be directly linked to basic industries such as engineering, iron and steel industries (production of agricultural implements), chemical industries (agricultural chemicals, crop protection products), cement factories (irrigation canals, etc.). These are generally large industries likely to have strong linkages in the total economy. They are very often national or multi-national in character. Some backward linkage industries (agricultural implements and livestock feed industries) and small forward linkage industries (textiles and food industries) must be developed locally and be linked directly to the establishment of secondary urban centres capable of playing the balancing role of big cities. These industries can play an important role in the development of agricultural surplus and can direct the organization of trade networks and flows.

74. Indeed, there is need to create strong centres, whose activities will be the driving force behind the creation of linkages through the development of trade flows or exchange of information which will encourage innovation. Thus, the centres for applied research, linked functionally to an effective vocational and techno-economic information dissemination network should, by virtue of their nature, be the active centres needed for agricultural and industrial development.

75. Industrialization must be viewed in the context of the location of production units and regional economic activities. Harmonization errors result in adverse imbalances in every respect and are very costly in the short run. Badly planned industrialization only distorts the harmony of the countryside.

76. Although the best "economic" location of an industrial unit is that location which minimizes production costs, it is equally true that the analysis of production cost must take account of unquantifiable induced costs directly linked to the social advantages and disadvantages of a given location.

77. The preparation of a physical plan to stimulate industrialization in a given region should not only involve a consideration of the price structure but also include an analysis of the future of the region as a whole in relation to other existing development poles. Physical planning cannot therefore, at this stage, be restricted to capitalist concepts because of the natural and logical tendency of making the community pay for social costs.

78. The industrialization of disadvantaged areas however presents its own difficulties: inadequate infrastructure, shortage of skilled manpower, etc. From the point of view of the private investor, such areas are not attractive. It is clear therefore that urban concentrations which have a certain minimum of facilities are generally more competitive as far as industrial location is concerned. This means that governments must gradually take over from private investors in order to provide opportunities in the disadvantaged regions. The action of governments can be direct (overall financing of investments) or indirect (incentive for decentralization through a policy of offering various advantages: tax exemption, price guarantees, protection of a guaranteed market, etc.).

79. Obviously, by virtue of their special characteristics, some industries such as the mining industry have predetermined geographical locations. However, technological progress is increasingly making it possible to overcome this serious situation of physical determinism. Prominent among these technical possibilities are various types of transport and communications system which will be treated in the next chapter.

80. The main criticism that can be levelled against the industrialization policy of African countries from the point of view of physical planning is that this industrialization is characterized by an unequal geographical distribution of industrial units and consequently the resultant trade flows. As a result of this situation, dominant and subordinate spaces have emerged over the national territories. Further, these industries are generally foreign oriented and are therefore ineffective with regard to economic effects on the hinterland.

81. Industrialization as outlined in the Monrovia Declaration should aim at ensuring economic independence. The economy of African countries should cease to be subjected to the commercial interests of the big powers. In this connexion, the search for solidarity and complementarity among the States should be a guiding principle in the choice of the nature, the size, type and location of industries. It is only this regional approach that can promote inter-African trade which is a prerequisite for initiating a "South-South dialogue".

82. All industrial units to be established in this context should centre around a local growth pole resulting from spatial analysis and the socio-economic units should be organized according to a global and coherent development and industrialization programme. Finally, the planning of the industrial structure should be linked with territorial development. Indeed, the growth and development of a country and its people can be achieved only through a conscious development of the means of propagating the effects of development poles. These are coherent structures which transform chaotic developments into orderly development.

83. However the search for complementarity among States should take into account the production ties, the problems of competition of the units, the real and potential areas of consumption, etc. Still these also call for the harmonization of customs fiscal and standardization policies as well as the planning of human resources (training and immigration policies). The countries concerned should show a strong and constant desire to achieve a regional integration of the African economies. This integration will be possible only through the establishment of an operational communication network. The establishment and the development of such a network is also a vital aspect of physical planning.

3. Physical planning and communications and transportation networks

84. Communications facilities and especially the functional analysis of the various networks constitute one of the vital instruments of physical planning. However in view of the establishment of the Transport and Communications Decade by the United Nations and the scientific and technical studies carried out under the auspices of ECA in connexion with this Decade, the question of communications and transport will be discussed only briefly. The main point is therefore to stress again the importance of these networks in spatial planning.

85. The negative influence of the concentration of hypertronic development in African cities on the various communication networks has already been dealt with in the first part of this document. In almost all the African States, the communications networks have been constructed to suit the immediate needs of the capital which is the headquarters of a foreign oriented economy to the detriment of the rest of the country which is subjected to a neo colonial type of agriculture. The deterioration of the terms of trade brought about by this situation worsens the already poor conditions in the rural areas and further encourages the influx of the rural youth into the cities.

86. Communications networks constructed in such an economic context which does not allow for any autonomous local development, cannot obviously serve as the genuine basis for physical planning which should first and foremost ensure a balanced development of all the micro spaces which consticuce the different national territories.

87. The development of communications networks is therefore always considered under two aspects which appear contradictory and ambivalent. It can, in fact, aggravate the already existing imbalances between natural and economic regions but it can also serve as the basis of a genuine physical planning for a harmonious interregional balance.

88. Communications networks can play this beneficial role thanks to the tremendous progress made in less than a century in techniques for public works. In view of this progress, the locational constraints associated with the existence or lack of raw materials in a given locality are, in fact, no longer an imperative locational factor and the improvements made in the fields of transportation and packaging of products as well as their increasing interchangeability have given rise to various possibilities of locating economic activities.

89. It can therefore be asserted that spatial development depends less on the end use of space for agricultural or industrial purposes than on the development of communications facilities. Indeed the concepts of flow and mobility are so closely linked with space that considerations of distance converted into distance-time carry greater weight than those relating to the location of a given economic activity.

90. This is why disenclavement occupies a prominent position in spatial planning especially at two extreme levels: the level of the backward areas where trade is in its embryonic state and the level of more developed areas where competition between economic activities is largely dictated by the efficient transportation and communication networks.

91. Problems posed by the unequal fluidity of space are therefore of great importance. Looking at the situation from the point of view of the economic development of the backward areas, it would be observed that government intervention should be a determining factor as regards the establishment and utilization of communications infrastructures. These types of governmental actions are discriminatory and selective acts of sovereignty. They are therefore political decisions as well as choices for national spatial planning.

92. From the technical viewpoint communications networks can serve as a powerful tool for the physical planning of areas which are already relatively developed. Actual distance is not merely what can be measured on the map - the concept of either distance/time or distance/cost which results from an in-depth study that takes account of the nature, destination and value of the object transported assumes greater importance than the notion of geographical distance. It is by actions discriminatorily on this notion of distance-cost that the State assumes its prerogatives as a planner.

93. Since the effect of spatial polarization varies depending on the various modes of transportation, governments should in the exercise of their prerogatives in the field of planning, direct their action to a comparative cost benefit analysis of these various modes of transportation. Indeed every transportation mode has its own characteristics, namely capacity, speed, cost etc. whose study depends on the traffic flow patterns and therefore cannot be treated here. Development planners must carefully weigh the advantages and disadvantages of the various transportation modes bearing in mind the inter zonal balances to be considered in planning the various economic activities.

94. However, as an eminent planner has noted, it is difficult, if not dangerous to define the advantages and disadvantages of each mode of transport in absolute terms because any traffic or communication problem is an equation with many variables and unknowns. However, assuming that comparisons can be made on the basis of some given "average" data, either physical, economic or political, it seems that spatial planning experts would agree that:

(i) The sea or inland waterways are particularly suitable for transporting heavy goods of little unit value (dispatch of raw mineral resources and taking delivery of unprocessed raw materials;

(ii) Rail transport is adapted to the movement of all kinds of goods over distances beyond 300 kilometres in areas in full economic bloom.

(iii) Air transport should be used to carry goods over distances beyond 1000 km and to handle high price items (spare parts and precision instruments and much needed perishable goods).

(iv) Road transport plays a very substantial local and regional role. The flexibility of its utilization permits door-to-door transportation and this is a great asset.

95. A last point to remember about inter-zonal transportation is the constant search for the means to ensure balance in trade flows. Indeed the imbalance of flow between one locality and another is not only upsetting from the technical and financial point of view because of empty return trips, but it also testifies to the existence of zonal tensions and disparities.

96. This overall analysis, though theoretical, should enable us to better understand the difficulties and the implications of the objectives of the Monrovia Declaration and the Lagos Plan of Action regarding transportation problems. To maintain the spirit of the Monrovia Declaration planners and agents of development should first of all, consider the following points:

(i) The need to develop intra African trade

(ii) The need to ensure complementarity of the economies of the different African countries

(iii) The need to integrate national networks into subregional and regional networks.

97. These considerations are obviously paramount among the concerns of those responsible for the Transport Decade, the Population Decade and the United Nations Conference on Trade and Development (UNCTAD). It is therefore unnecessary to analyse them in detail here. Suffice it to stress the primary importance of communications in the inter-sectoral relations of the different economic activities and especially its prominent position in human settlements planning since there is a close relationship between transport and communications networks and the distribution of population and activities.

4. Physical planning and urbanization

98. The historical evolution of the urban issue has already been dealt with in the first part of this study. It is therefore unnecessary to take up again a statistical study of urbanization in Africa. Besides this has already been the subject of a comprehensive study presented to the United Nations Conference on Human Settlements held in Vancouver, Canada. That Conference also examined in detail the modalities of the policies relating to habitat and housing, the fields which gave birth to physical planning.

99. Therefore, the urban question will be discussed only from the point of view of the vital role of cities in physical planning. There is need to restore to each city its polarizing role within the framework of the organization of the micro spaces of its hinterland. The primary objective of physical planning in Africa must therefore be to remove the adverse consequences arising from the tendency to polarize major cities.

100. The action of African planners must therefore be directed at city-countryside relationships. Indeed, the rate of urbanization which was below 10 per cent almost everywhere in 1950 increased in most of the countries, reaching or even exceeding 30 per cent. This was due to a rising birth rate and a considerable fall in death rate, coupled with a massive rural exodus. This growth in the urban areas was particularly due to the fact that some capitals had absorbed an average of 45 per cent of this growth.

101. There is a tendency to think that rural exodus is indicative of agricultural success which, changing from an extensive to an intensive system, provides the urban centres with additional rural manpower. In the chapter on agricultural development we saw that this interpretation is incompatible with reality. Rather, rural exodus almost everywhere shows the failure of the agricultural policies of the development models adopted by African countries. The contrast between the urban economy and the rural economy, based on the exploitation of the latter by the former, is the main cause of the exodus from rural areas.

102. It can therefore be said that in most of the African countries, the 'push factor' of the villages which are in constant poverty is greater than the 'pull factor' of the capitals where development activities have been concentrated. In other words, the exodus from the rural area is more the result of the 'repulsion' effect of the villages than the attraction effect of the cities.

103. African governments have tried, rather unsuccessfully to fight the rural exodus instead of addressing themselves to the root causes of the problem. It must be admitted that there can be no town planning without rural development within the framework of a new agricultural production system.

104. There is an obvious need to take up henceforth, the management and organization of towns without waiting for the effective implementation of this agricultural production system. The organization of towns falls under town planning which, in the final analysis, is nothing but physical planning at a micro-level. This question is already a major concern of the Intergovernmental Regional Committee on Human Settlements. The relevant programmes cover urban master plans, housing programmes integrated into building materials programmes, policies for the provision of facilities, green spaces, zoning of urban areas and environmental protection.

105. In view of the foregoing, there is a need to examine at this stage a methodology for planning the national territories using African cities as the basis. The main objective is to make all the cities poles of self-sustaining development as defined in the Monrovia Declaration and the Lagos Plan of Action. This means making each town of a given national territory a set of 'power units' with linkages in a clearly defined area in specific economic relations.

106. The aim of these 'development poles is to strengthen the 'power units' over the whole territory with a view to eliminating the effects of economic domination in favour of a global relationship based on functional complementarity. This strengthening of the 'power units' will depend on the implementation of a policy on the development of a hierarchy of towns. This hierarchy operates on the basis of the specialization of each city. Indeed, one can talk of the existence of a city only when its activities are likely to have an endogenous multiplying effect on the hinterland through the special function that it performs.

107. It can generally be said therefore that there can be no effective physical planning without the decentralization and strengthening of the powers of local communities. The Monrovia Declaration and the Lagos Plan of Action obviously provide an adequate framework for the implementation of such a decentralization policy based on an effective participation of the local populations in the development effort.

5. Physical planning and the environment

108. The Monrovia Declaration gives special attention to environmental matters. This interest is due to the fact that the protection and management of the environment command attention in all the sectoral aspects of economic development namely, agricultural development, industrial development, communications networks and urbanization.

109. However before considering the relationship between environmental management and the different economic sectors, it is necessary to analyze the reaction of African governments to theories relating to the environment. This analysis will aid an appreciation of the importance that ought to be attached to this issue so that it would be given some priority in development programmes.

110. There is a dialatic relationship between the state of a given environment and the level of development of societies living in that environment. From a strictly historical point of view, we can say that researchers began to think about the problem of the environment after realizing the adverse consequences of industrial pollution. Thus, in developed countries, growth no longer seemed to be the main objective of the econometrics of development. Added to this necessity is the need for improving the living conditions including working conditions and leisure. This is why theories on environmental protection are considered by decision-makers in Africa as minor preoccupations which do not deserve to be accorded priority whilst the very survival of African peoples is at stake.

111. At present, many African governments are of the opinion that anxiety about the environment stems from a new scientific preoccupation which is more needed by developed countries than those of the Third World but to consider environmental problems as a new hobby for the developed countries is to gamble dangerously with the future of developing countries. The debate should simply be viewed afresh in its true historical and socio economic context before taking definite conclusions.

112. Developed countries should find immediate solutions to the incidence of catastrophic destruction of their environment. Developing countries should, from now on work out protection measures in expectation of upheavals which the implementation of development patterns based on growth, inordinate search for profit and inconsiderate exploitation of natural resources will produce on their eco-systems.

113. The exploitation of natural resources should take account of what the nature of the environment will be in future. . . For their part, developed countries have opted for societies said to be consumer societies, that is to say societies which emphasize an apparent squandering of essential resources. They now have to deal with the consequences of the acts of aggression against nature, resulting from the socio economic development pattern they have chosen. The disruptions of their environment should serve as a lesson to African countries. The over developed world has to repair the damage done to nature whilst Africa should seek to prevent the damage that would be caused if the laws of nature are not respected.

114. This difference of approach is still to be commended when relationships between industrialization and environmental protection are examined. To illustrate how decision makers in developing countries view the problem, let us consider two statements which became popular during a United Nations Conference on the environment.

(1) All the developing countries have been warned about the risks they are running; but are ready to accept 1/100th of the total pollution of developed countries if only this would mean for them a diversification of their economy through industrialization. They should not be deceived by the urgent need for development and growth that there would be an atmosphere free from smoke or a landscape without factory chimneys.

(2) The under-developed countries are asking for admission into this club of industrial polluters which are not as guilty as claimed by some people.

115. All this argument shows how delicate the matter is when examined in the perspective of economic development. It should be added that industrial concerns in developed countries are being gradually subjected to stringent laws against pollution and in order to safeguard the competitiveness of their products, they transplant their industrial units into the Third World countries which, faced with employment and development problems, do not have any choice but accept to be subjected to pollution.

116. At this time when the Monrovia Declaration and the Lagos Plan of Action are calling upon African States to adopt another economic development pattern, this long introductory discussion on the problem of the environment was considered indispensable in order to re-emphasize the importance of the problem within the framework of an autonomous, self-sustained and endogenous development.

117. Thus, in view of the foregoing considerations, it can be asserted that industrialization in Africa, considered from the environmental point of view, should be effected through a technology different from that used in the developed countries. In this connexion it is essential to make scientific research autonomous and to adapt it to the actual needs of the countries within the framework of the type of society envisaged in the Lagos Plan of Action.

118. Within the context of the utilization of technology, besides the harnessing of natural resources, special importance should be given to the various uses of water as well as a wider use of raw materials and renewable energy resources. But it is not yet possible to stipulate what can be considered as an optimum relationship between the industrial regions and their ability to support the ecological stress. It is within the framework of a co-operation policy geared to this end, that countries should engage in the exchange of data on experiences and information which could assist in finding prompt solutions. Besides, since the biosphere is an indivisible entity, some activities undertaken in a given country affect the natural environment in a far-reaching way which assumes a dimension that is regional in character and could even be global.

119. Since foresight is essential to good leadership, African countries should make their industrial programmes complete by adopting a number of legislative measures aimed at forestalling any possible damage to their eco-systems. These legislative measures should be formulated at the regional level within the framework of a well defined co-operation arrangement.

120. With regard to the relationship between the environment and agricultural activities, it cannot be denied that research into ecological sciences must also constitute an important element of agricultural development programmes. Indeed, it is agricultural activities which have historically had the greatest influence on the biosphere. Consequently, agricultural zones constitute the oldest artificial eco-systems.

121. It is necessary to take the environmental factor into account especially in the field of hydro agricultural development because no in-depth studies have so far been conducted into the adverse effects of this development on eco-systems. The construction of dams offers much needed solutions to some crucial problems relating to irrigation, transport and energy but on the other hand; if care is not taken, it creates other problems of destruction of the environment. These problems, often serious, are insidious in character difficult to solve and sometimes engender other calamities.

122. Many states put great hopes in the development of their rivers. However, most of the rivers in the region are shared by several states. In view of the haphazard demarcation of "balkanization borders" the development of the major rivers should be done within the framework of consultation and intergovernmental co-operation. This means that a legal framework has to be defined to govern the rivers and lakes. Like the conference on the law of the sea, an African conference on the conditions for the exploitation of river and lake resources would make it possible to work out a genuine code for tapping water resources and potentials.

123. Similarly, it should be possible to draw up an integrated village water programme for the sedentary and nomadic populations, create an integrated fire belt and wind protection networks and reorganize on a regular basis the transhumance circuits. The over-all programme in this area should obviously incorporate health objectives such as the eradication of onchocercosis and tripanomiasis in infested areas.

124. Lastly, with regard to the relationship between urbanization and the environment, the Monrovia Declaration and the Lagos Plan of Action highlight the need to involve the populace in drawing up and implementing programmes of action. However, the vast majority of the urban population have neither a sufficient background to adequately understand environmental problems nor an adequate information base to make a decision on the problems. Therefore, the most effective solutions to these problems must include measures aimed at educating and training the urban populace.

125. Sanitation problems must be solved first at the level of each dwelling unit and then at the level of blocks of houses and the community through a collective effort embracing civic education, hygiene and health. Since urban areas are, in essence, places where social activities take place on a large scale, they are also the breeding ground of congestion, overcrowding and other nuisances which disturb the environment. Constant efforts should therefore be made to relieve congestion and to plan, regulate, control and especially combat pollution which includes unpleasant odour and noise.

126. Finally, it must be recognized, that no environmental problem can be treated in isolation. It is imperative, therefore, to constantly include these problems in each sector of economic and social activities at every stage of the development process.

V. General conclusion

127. Obviously, not all the major themes of physical planning are discussed within the framework of this study. The themes discussed here are those that are considered priority areas by the Monrovia Declaration and the Lagos Plan of Action. This constant reference to the Monrovia Declaration is the only way one can really ensure some uniformity in analysis, considering that eventhough African countries are confronted by similar situations, they are quite different from one another.

128. However, irrespective of the diverse economic situations in the countries, one should constantly bear in mind that general economic planning and physical planning are inseperable. The latter is however subordinate to the former. Physical planning in Africa must give priority to the eradication of economic imbalances within each national territory through a rational redistribution of economic activities. This is why physical planning in Africa must first and foremost aim at developing micro-areas and then making constant efforts geared towards ensuring structural cohesion between the areas thus developed.

129. However, whatever the peculiarity of national situations and the level of development, there can be no physical planning without the use of maps and statistics which are indispensable tools. Therefore, each country must henceforth launch very comprehensive cartographic programmes and make a scientific inventory of all the economic, geographical and social data, etc.

130. With these two tools each country will be able to draw up its physical planning programme, formulate its urban master plans, define its urban hierarchy, establish its communications networks, draw up rural zoning programmes and decide on the location of its industries.